CHAPTER - III
RESEARCH METHODOLOGY

Research methodology is a way to systematically solve the research problems. It may be understood as a science of studying how research is done scientifically. In it, we study the various steps that are generally adopted by a researcher in studying his research problem along with the logic behind them (Kothari, 2004).

Methodology helps to understand not only the products of scientific inquiry but the process itself. It aims to describe and analyze methods, throw light on their limitations and resources, clarify their presuppositions and consequences, relating their potentialities to the twilight zone at the ‘frontiers of knowledge’ Koosis (1972).

In this chapter sample, sampling techniques, sample size, area of population, tools of data collection, research design, method of data collection, and statistical techniques are discussed.

The problem
The problem of the present research is stated as-

“To study the psychosocial correlates of irritable bowel syndrome (IBS) among adolescents.”

Variable of the study

Independent variable – Three independent variables named emotional maturity, parenting style and socioeconomic status of the respondents have been selected for the present investigation.
• **Emotional maturity** - The first variable called as emotional maturity comprised of five distinguished dimensions i.e. emotional instability/stability, emotional regression/progression, social maladjustment/adjustment, personality disintegration/integration, and emotional dependence/independence.

• **Parenting style** - The second variable named parenting style comprised of eight distinguished dimensions i.e. Rejection Vs. Acceptance, Carelessness Vs. Protection, Neglect Vs. Indulgence, Utopian expectation Vs. Realism, Lenient standard Vs. Moralism, Freedom Vs. Discipline, Faulty role expectation Vs. Realistic role expectation and Marital conflict Vs. Marital adjustment.

• **Socioeconomic status** - The third variable was socioeconomic status which comprised of education, occupation, income, and caste of the parents of the respondents.

**Dependent variable** – Irritable bowel syndrome (IBS) has been selected as dependent variable.

**Research sample**

The act, process, or technique of selecting a suitable sample, or a representative part of a population for the purpose of determining parameters or characteristics of the whole population is sampling. A sample is a finite part of a statistical population whose properties are studied to gain information about the whole (Webster, 1985). When dealing with people, it can be defined as a set of respondents (people) selected from a larger population for the purpose of a research. A sample is a small part of the total existing events, objects or the information (Mohsin, 1984)
Sample is a part of a population selected such that it is considered to be representative of the population as a whole” (Reber, 1987)

Kothari, 2004 mentioned some characteristics of a good sample design. They are as follows:

- Sample design must result in a truly representative sample.
- Sample design must be such which results in a small sampling error.
- Sample design must be viable in the context of funds available for the research study.
- Sample design must be such so that systematic bias can be controlled in a better way.
- Sample should be such that the results of the sample study can be applied, in general, for the universe with a reasonable level of confidence.

Sampling provides a means of gaining information about the population without the need to examine the population in its entirety. Generally we do sampling because we cannot take whole population, that would be too vast to manage and too costly, and we cannot take one that would be too small for theoretical generalization.

In the present study a total sample consisted of 200 adolescents in which half of the sample (N=100) was based upon the respondents of IBS and other half (N=100) was based upon the respondents of non-IBS. The age range of the respondents was 13-18 years. The sample was selected by the use of purposive sampling technique for IBS and random sampling technique for non-IBS respondents. Further, IBS sample was selected from 10 out of 14 different CBSE schools located
in Meerut city proper. The list and respected number of unit was as under.

1. Kuber Public School (IBS- 00, non IBS- 00)
2. Karan Public School (IBS- 11, non IBS- 10)
3. Dewan Public School (IBS- 00, non IBS- 00)
4. J P Academy (IBS- 13, non IBS- 12)
5. Millennium Public School (IBS- 09, non IBS- 07)
6. Guru Teg Bahadur Public School (IBS- 24, non IBS- 28)
7. Goodwin Public school (IBS- 14, non IBS- 16)
8. Krishna Public School (IBS- 00, non IBS- 00)
9. Ashoka Academy (IBS- 01, non IBS- 02)
10. Modern Public School (IBS- 02, non IBS- 02)
11. Capital Public School (IBS- 00, non IBS- 00)
12. International Public School (IBS- 06, non IBS- 06)
13. Bhai Joga Singh Public School (IBS- 00, non IBS- 00)
14. Translam Academy International (IBS- 20, non IBS- 17)

TOTAL (IBS- 100, NON IBS- 100)

Tools used

In order to measure the independent and dependent variables of the present study, following tests and materials were used:

1. Questionnaire based on Rome II criteria
2. Emotional Maturity Scale
3. Parenting Scale (P-Scale)
4. Socioeconomic Status Inventory

The details of these tests are given below:

I. A questionnaire based on Rome II criteria was prepared and used to assess the IBS among the adolescents. It has two forms – male and female. Male form contains 6 questions and female form contains 7.
II. **Female form**: If response on item no. 1 is ‘yes’, on item no. 2 is ‘no’, on item no. 3, ‘yes’ on any one out of first four categories, on item no. 4 response is ‘yes’ and, ‘yes’ on at least two of item no. 5-8, IBS is diagnosed. (compulsory ‘yes’ on item 1 and at least two of 4-6)

III. **Male form**: If response on item no. 1 is ‘yes’, on item no. 2 , ‘yes’ on any one out of first four categories, on item no. 3 response is ‘yes’ and, ‘yes’ on at least two of item no. 4-7, IBS is diagnosed. (compulsory ‘yes’ on item 1 and at least two of 3-5)

IV. **Emotional Maturity Scale**: Emotional Maturity Scale by Y. Singh and M. Bhargava (1998) was used to measure the emotional maturity of adolescents. Authors of the present scale, prepared a list of Five factors of emotional maturity which is given below :

a. Emotional stability.
b. Emotional progression.
c. Social adjustment.
d. Personality integration and
e. Independence.

a) **Emotional stability**: Emotional stability refers to the characteristics of a person that does not allow him to react excessively or given to swings in mood or marked changes in any emotive situation. The emotionally stable person is able to do what is required of him in any given situation. Contrary to it, emotional instability is a tendency to quick changing and unreliable responses and is a factor representing syndrome of irritability, stubbornness, temper-tantrums, lack of capacity to dispose off problems and seek help for one’s day to day problems.

b) **Emotional progression**: Emotional progression is the characteristic
of a person that refers to a feeling of adequate advancement and growing vitality of emotions in relation to the environment to ensure a positive thinking imbued with righteousness and contentment. Whereas emotional regression is also a broad group of factors representing such syndromes as feeling of inferiority, restlessness, hostility, aggressiveness and self-centeredness.

c) **Social Adjustment**: Social adjustment refers to a process of interaction between the needs of a person and demands of the social environment in any given situation, so that they can maintain and adapt a desired relationship with environment. Therefore, it may be socially maladjusted person shows lack of social world. Whereas socially maladjusted person shows lack of social adaptability should adaptability should hatred, seclusive but boasting, liar and shirker.

d) **Personality Integration**: Personality integration is the process of firmly unifying the diverse elements of an individual’s motives and dynamic tendencies, resulting in harmonious co-action and de-escalation of the inner conflict (English and English, 1958) in the undaunted expression of behaviour, whereas disintegrated personality includes all those symptoms, like reaction, phobias formation, rationalization, pessimism, immorality etc. Such a person suffers from inferiorities and hence reacts to environment through aggressiveness, destruction and has distorted sense of reality. In brief, such a person shows varied degrees of neuroticism.

e) **Independence**: Independence is the capacity of a person’s attitudinal tendency to be self reliant or of resistance to control by others, where he can take his decisions by his own judgment based on facts by utilizing his intellectual and creative potentialities. He
would never like to show any habitual reliance upon another person in making his decisions or carrying out difficult actions, whereas a depended person shows parasitic dependence on other is egotic and lacks ‘objective interests’. People think of him as an unreliable person.

**No of items:** Total number of items in this scale is 48 distributed dimensions wise as Emotional stability – 10 (item no. 1 to 10), Emotional progression – 10 (item no. 11 to 20), social adjustment – 10 (item no. 21 to 30), personality integration – 10 (item no. 31 to 40) and independence – 08 (item no. 41 to 48).

**Scoring of Emotional Maturity Scale:** Items of the scale are in question form demanding the information for each in either of the five options mentioned below:-

<table>
<thead>
<tr>
<th>Very much</th>
<th>much</th>
<th>undecided</th>
<th>probably</th>
<th>never</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

The items are so stated that if the answer is very much a score of 5 is given; for much 4; for undecided 3; and for probably 2 and for negative answer of never a score of 1 is to be awarded. Minimum marks obtained will be 48 and maximum marks obtained will be 240. Therefore, higher the score on the scale, greater the degree of the emotional immaturity and vice-versa.

**Reliability of Emotional Maturity Scale:** The reliability of the scale was determined by:

1. Test-retest Method and
2. Internal Consistency

1 **Test-retest reliability**: The scale was measured for its test-retest
reliability by administering upon a group of collegiate students \((N = 150)\) including male and female students aged 20-24 years. The time interval between the two testing’s was that of six months. The product moment \(r\) between the two testing was .75.

2. **Internal Consistency**: The internal consistency of the scale was checked by calculating the coefficient of correlations between total scores and scores on each of the five areas. Table 1 given below, shows the values of internal consistency.

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Areas</th>
<th>R Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>Emotional Stability</td>
<td>.75</td>
</tr>
<tr>
<td>b.</td>
<td>Emotional Progression</td>
<td>.63</td>
</tr>
<tr>
<td>c.</td>
<td>Social Adjustment</td>
<td>.58</td>
</tr>
<tr>
<td>d.</td>
<td>Personality Integration</td>
<td>.86</td>
</tr>
<tr>
<td>e.</td>
<td>Independence</td>
<td>.42</td>
</tr>
</tbody>
</table>

**Validity of Emotional Maturity Scale**: The scale was validated against external criteria, i.e. the (e) area of the adjustment inventory for college students by Sinha and Singh. The inventory has (e) area measuring emotional adjustment of college students. The number of items of this area is twenty-one. Product moment correlation obtained between total scores on all twenty-one (e) items and total scores on EMS was .64 \((N = 46)\).

V. **Parenting Scale**: Parenting Scale (P-Scale) by Dr. R.L. Bharadwaj, H. Sharma and A. Garg (1998) was used to measure the perception towards parenting style. Eight parenting models have been included in the present scale which may be enumerated as under –

1. Rejection Vs. Acceptance
2. Carelessness Vs. Protection
3. Neglect Vs. Indulgence
4. Utopian expectation Vs. Realism.
5. Lenient standard Vs. Moralism.
7. Faulty role expectation Vs. Realistic role expectation.
8. Marital conflict Vs. Marital adjustment.

1. **Rejection Vs. Acceptance:** A child develops shock when he does not find proper care and response of his parents. The infantile honesty and truthfulness meets an adverse atmosphere and therefore the psychological growth of the child is affected. It is quite natural that a child meets proper nourishment of his genuine feelings. Denial of love and affection freezes the genial current of infantile simplicity. Various aberrations in the behaviour of child are the product of this denial of natural love to them.

   Rejection of parents manifests itself in interpersonal relationships in direct ways, when the child has to face excessive criticism, invidious comparison, harsh and inconsistent punishment by both or either of the parents in his upbringing. Rejection of parents may also evince itself in physical neglect, denial of love and affection, lack of interest in his activities and failure to spend time with him.

   On the other hand parental acceptance implies an attitude of love for the child. The accepting parent puts the child in a position of importance in the home and develops a relationship of emotional warmth. Parental acceptance encourages the child and makes itself apparent in receptive or positive attitude towards the child’s idea and
judgment, worthiness and capability, love and affection and admiration along with adequate attention towards him.

2. Carelessness Vs. Protection: Parenting on carelessness dimension manifests itself, when both or either parents do not pay adequate heed towards child’s activities thus giving an impression of unwantedness by careless and un-thoughtful negligible behaviour towards him even in presence of his proper and worthy behaviour in day to day matter.

On the other hand the sense of protection in the child makes him better and more confident. It is true that over-protection is a disease and obstructs the independent growth of the child. But the sense of protection gives him strength and psychological support. So the sense of protection should not be confused with the term overprotection which consists in excessive contact of parents with the child, such as fondling him or sleeping with him, prolongation of infantile care as nursing, bathing and dressing when child can do it itself, prevention of the growth of self reliance by supervising the child’s activities too much and defending him or solving his problems. It also shows over anxiousness towards the child’s health and shields him from vigorous participation in competing activities. Thus, over protection signifies giving more care to their child than what is necessary and can only be deemed as the hyper state of protection.

3. Neglect Vs. Indulgence: Neglecting the children by their parents even after conscious of their need is again injurious to their psychological health. It manifests itself in lack of attention and cooperation with them, willful ignoring them and their activities and
avoidance of their genuine needs. Giving more importance to self designs of work but least attention to their feelings and needs, come within purview of neglect.

On the other hand over indulgence of parents with the child develop certain whims and psychological inconsistencies in the latter. It may be seen in the parents yielding to every demand of the child and failure to exercise the needed constraint even when necessary. Such a child becomes unfit for a reasonable adjustment in the social circumstances. However, it should be kept open to ourselves that indulgence with the child to a reasonable degree shall be deemed as a health giving sign. It helps in developing the child’s emotional response to the situation.

4. Utopian expectation Vs. Realism: The utopian expectation dimension exhibits itself in expecting a very high quality of performance from the child even against his capabilities. Such parents use their children as a means of achieving their own thwarted ambitions without taking into consideration their abilities and limitations. Such parents are over-ambitious regarding their children. The more children achieve, the more parents expect of them. Thus, very high, unrealistic and imaginary demand of parents regarding to the performance of their children come within the purview of utopian expectations which are not fulfilled by the children.

A parental attitude of realism signifies itself in taking into consideration the objective realities pertaining to both, the child’s capabilities and outside world while setting up and expecting his level of performance.
5. **Lenient standards Vs. Moralism:** This mode of parenting takes into account lenient standard as a negative dimension and moralism as a positive dimension. Lenient standard of parents make themselves apparent in permitting lesser restrictions from deviations from ethical and moral behaviour and an attitude showing indifference against such inhibitions to restrict child’s freedom and individuality.

Moralism as a socio-cultural product refers to the doctrine of duties of life, principles and conduct adhering to what is right and virtuous and plays an important role in the dynamics of social relations. It would be an excessive degree, it harms the child's natural and dynamic integration. Certain parents develop an attitude of condemnation of the child’s mild departure from the ideals of morality and force them to live a strong puritan life. This attitude is again harmful.

6. **Freedom Vs. Discipline:** Freedom manifests itself in absence of restraints over all matters to what they may pertain to. In fact the child is a sole decision maker of his activities. There is hardly any questioning or impediments on the part of parents. He may disregard or disobey his parents without any fear of punishment from them.

On the other hand, parents with a penchant for strict discipline simply pass on orders to their children who have to merely obey them. The child is not allowed to take any decision regarding his dress, appearance, manners, friend or other activities of his life. Disobedience is met with punishment whereas obedience is appreciated.
Although, the discipline is strong need of social orientations yet severe discipline on the part of parents hamper the delight and liberty of the child which he wishes to obtain at every stage of life.

7. Faulty role expectation Vs. Realistic role expectation: On the dimension of faulty role expectation parenting, the child is always confused and embarrassed because of the unpredictable expectations of his parents. Parents usually expect divergent and contradictory roles from their parents.

The other dimension of realistic role expectation is just reverse. Parents present themselves as an example to be followed by the children and their behaviour is thoughtful, consistent and predictable in day to day strives. The children know for certain what their parents are alike and what is expected to them.

8. Marital conflict Vs. Marital adjustment: On the negative dimension marital conflict affects the child as and when he/she witnesses open conflicts between their parents. The child is not able to reconcile with and it leaves a non-palatable feeling on his mind.

Marital adjustment exhibits itself in a calm and composed adjustment between the parents thereby creating a solidarity and congenial atmosphere of peace and harmony in the family.

No of items: Total number of items in this scale is 40 distributed dimensions wise as rejection vs. acceptance – 5 (item no.1, 8, 15, 22 and 29), carelessness vs. protection – 5 (item no. 2, 9, 16, 23 and 30), neglect vs. indulgence – 5 (item no. 3, 10, 17, 24, and 31), utopian expectation vs realism – 5 (item no. 4, 11, 18, 25, 32), lenient standards vs. moralism – 5 (item no. 5, 12, 19, 26 and 33), freedom vs. discipline
– 5 (item no. 6, 13, 20, 27 and 34), faulty role expectation vs. realistic role expectation – 5 (item no. 7, 14, 21, 28 and 35), marital adjustment vs. marital conflict – 5 (item no. 36, 37, 38, 39 and 40)

**Scoring of Parenting Scale:** The scoring of parenting scale is of quantitative type and is based on five point scale as suggested by Likert. The scoring and determination of mothering and fathering as well as parenting is a complex one and the following things are to be kept in mind at the time of scoring the scale:

1. Each item of the scale is to be scored from upper to lower in terms of 1, 2, 3, 4 and 5. The scoring of item number 4, 11, 18, 25 and 32 will be in reverse order (i.e. 5, 4, 3, 2, and 1). Minimum marks obtained will be 40 and maximum marks obtained will be 120.

2. The obtained scores are to be transferred on the last page at the space divided for both the parents and are to be added vertically to determine the raw score for mothering and fathering separately for different modes of parenting.

**Reliability of P-scale:** The reliability of this test on a sample of 100 elements has been determined by test and retest method with an interval of 21 days on a sample of 100 elements. The obtained reliability co-efficient may be enumerated as under.

**Table 3.02: Co-efficient of Reliability (Test-Retest).**

<table>
<thead>
<tr>
<th>Modes of Parenting</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Co-efficient of reliability</td>
<td>.79</td>
<td>.54</td>
<td>.64</td>
<td>.59</td>
<td>.67</td>
<td>.56</td>
<td>.74</td>
<td>.69</td>
<td>.72</td>
</tr>
</tbody>
</table>

**Validity of P-scale:** The estimated validity with the parallel form was
found to be follows-

**Table 3.03: Validity Coefficient (with form B).**

<table>
<thead>
<tr>
<th>Modes of Parenting</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Co-efficient of reliability</td>
<td>.45</td>
<td>.39</td>
<td>.42</td>
<td>.62</td>
<td>.38</td>
<td>.52</td>
<td>.57</td>
<td>.36</td>
<td>.75</td>
</tr>
</tbody>
</table>

**VI. Socioeconomic Status Inventory:** SES Inventory by Dr. A. C. Vashishtha was used to measure the social standing or social position of the subjects. To assess socioeconomic status of the respondents four criteria were taken in this inventory:-

1. **Education:** First item measures education of mother and father. It contains ten sub categories ranging from uneducated to technical degree.

2. **Occupation:** Second item measures occupation of mother and father. It contains four sub category ranging from judge of Supreme Court, principle of university to gardener, watchman.

3. **Income:** Third item measures income of both mother and father. It contains six sub category starting from Rs. 01- 5000 per month to Rs. 25000 and above per month.

4. **Caste:** Forth item measure cast of both mother and father. It contains three sub categories naming upper cast, schedule cast-schedule tribe, and other backward cast.
Scoring of socioeconomic inventory: Scoring of socioeconomic inventory is as follows- item number 1 and 3 is to be scored from upper to lower in terms of 1, 2, 3, 4 and 5. The scoring of item number 2 and 4 will be in reverse order (i.e. 5, 4, 3, 2, and 1).

Reliability of SES scale: The scale was measured for its test-retest reliability by administering upon a group of school students (N = 100) including male (N = 50) and female (N = 50) students aged 13-14 years. The product moment r between the two testing was .97.

Validity of SES scale: The scale was validated against external criteria, i.e. the socioeconomic status index by Prof. R.P Verma, Prof. P.C. Saxena, and Dr. Usha Mishra. Product moment correlation obtained between total scores of SESI and total scores on SES was .62 (N = 100).

Research Design

Research design is needed to facilitate the smooth sailing of the various research operations, thereby making research as efficient as possible yielding maximal information with minimal expenditure of efforts time and money.

The present study is an attempt to find the effect of certain psychosocial variables such as emotional maturity, parenting style and socioeconomic status on IBS in adolescents. To carryout research in more scientific manner appropriate research design has been used. The choice of appropriate design depends upon the special characteristics of the variable, availability of the sample, nature of measuring instrument and restraints regarding the manipulation of variable being studied. Our understanding of research design helps in
carrying out the investigation to its ultimate objective. In the present investigation three psychosocial variables (emotional maturity, perception of parenting style and socioeconomic status) were selected as independent variables. Research was designed to examine the relationship between the predictor variables and the criterion variable and to find out predictors of irritable bowel syndrome. Design of the present research is as follows:

<table>
<thead>
<tr>
<th>IVS</th>
<th>DV</th>
</tr>
</thead>
<tbody>
<tr>
<td>X1 Emotional maturity</td>
<td>Y</td>
</tr>
<tr>
<td>X2 Parenting style</td>
<td>IBS</td>
</tr>
<tr>
<td>X3 Socio-economic status</td>
<td></td>
</tr>
</tbody>
</table>

**Data collection**

The task of data collection begins after a research problem has been defined and research design/plan chalked out. While deciding about the method of the data collection to be used for study, the researcher should keep in mind two types of data viz., primary and secondary. The primary data are those which are collected afresh and for the first time, and thus happen to be original in character. The secondary data, on the other hand, are those which are already been collected by someone else and which have already been past through the statistical process. In this research the nature of data is primary and the method of data collection is questionnaire method.

The data was collected in two sessions. The first session was conducted in group situation to identify students with IBS. After taking
due permission of the School authorities, the investigator met the students class wise. Thereafter forming rapport with the students by giving a short orientation about the research and the test, a questionnaire based on Rome II criteria was distributed to screen out the students with IBS, after getting their consent. At the time when the students of a particular class were undergoing the test, the investigator was present to sort out any misconception or the problems. The screener was applied on all the students of class 9 to 12. In the same manner data was collected from fourteen C.B.S.E. schools of Meerut city. The screener was administered on total 3808 students of class 9 to 12 from these schools.

Students having IBS were screened out on the basis of diagnostic criteria which were found only in ten schools out of fourteen schools. Then with the help of the roll list, taken from the class teacher, the investigator randomly selected equal non-IBS counterparts from that particular class in which IBS respondents were found.

The second session was also done in a group situation with IBS respondents and their counterparts selected in the sample, both the groups were tested separately and data was collected on the rest of the three tests i.e. emotional maturity scale, parenting scale and socioeconomic inventory. The investigator after orienting, gave instructions and respondents were told to fill the tests. The investigator was present to sort out the problems and misconception regarding any of the questions of the tests. When all the respondents had completed the tests were collected and they were thanked for their cooperation.
The same procedure was followed in rest of the schools. This procedure was followed till the responses of all 100 IBS respondents and 100 non-IBS counterparts were collected. After collecting all the data from each school, with the help of scoring methods mentioned in manual of each test, scoring was done and data was tabulated.

Statistical analysis

For statistical analysis of data multiple regression was used. Multiple regression is a statistical technique that allows to predict someone’s score on one variable on the basis of their scores on several other variables. Multiple regression is used when there is one outcome (dependent) variable and multiple predictors. The result of multiple regression is a statistic called multiple \( R \), which is the combined correlation of a set of independent variables with the dependent variable. Karlinger (1978) suggests that “Multiple regression is a method for studying the effects and the magnitudes of the effects of more than one independent variables on one dependent variable using principles of correlation and regression.”

In this research independent variables are emotional maturity, parenting style and socioeconomic status and dependent variable is irritable bowel syndrome. Multiple regression technique relates independent to the dependent variables in a manner which also takes interactive effects in to accounts (Kothari, 1987). It has one another feature i.e. its flexibility. It does not impose any restrictions on the independent variable whether they are correlated or uncorrelated. There are many types of multiple regression, but here researcher used linear
regression technique. The researcher used this technique to have a better idea of the independent contribution of each explanatory variable.

It is to be mentioned that the choice of the statistical method was governed by the objectives of the study which has been clearly spelt out in chapter II. Objective of this research was to find the psychosocial predictor (emotional maturity, parenting style and socioeconomic status) of IBS for which multiple regression was selected and employed on the data. As researcher had also hypothesized that there will be a difference between IBS and non-IBS group, t-test was used to test these hypotheses and to compare two groups (IBS and non IBS). Results and findings are discussed in the succeeding chapter.